NHDOT SPR2 PROGRAM

RESEARCH PROGRESS REPORT

Project # *26962S*	**Report Period** Year *2017* ☒Q1 (Jan-Mar) ☐Q2 (Apr-Jun) ☐Q3 (Jul-Sep) ☐Q4 (Oct-Dec)	
Project Title: *Assessing lower impulse load levels on reinforced asphalt pavement*		
Project Investigator: *Lynette Barna* **Phone: 603-646-4503**	**E-mail: Lynette.A.Barna@usace.army.mil**	
Project Start Date: *03 January 2017*[a] *30 November 2016*	**Project End Date:** *03 January 2018*	**Project schedule status:** ☒On schedule ☐ Ahead of schedule ☐ Behind schedule *Check appropriate box*

[a]Project start date per Cooperative Research and Development Agreement (CRADA)

Brief Project Description:

NHDOT installed fiberglass grid reinforcement in several flexible roadways throughout the state in an effort to address fatigue cracking and extend the service life. Coefficient values for fiberglass reinforced asphalt pavement are needed for design. Data collected during the fall of 2014 from impulse load testing at three test sections representing the thin asphalt layer will be analyzed to determine coefficient values for design. The field data was collected on NH Route 101 using Falling Weight Deflectometer [FWD] and Lightweight Deflectometer [LWD] pavement testing equipment. The data analysis will evaluate the FWD deflection measurements at the lower load levels and the LWD data to determine the possible benefit of reinforcing grid in the asphalt layer.

Progress this Quarter (include meetings, installations, equipment purchases, significant progress, etc.):

- A project kick-off meeting was held with NHDOT stakeholders (Bureau of Materials and Research, Bureau of Highway Design, and Bureau of Maintenance and Repair) on 3 March 2017 at the NHDOT Concord office. The meeting discussed project specifics, including the objective, approach, deliverables, and timeframe.
- Field data files from the falling weight deflectometer (FWD) were reviewed and checked. FWD data from the 6, 9, and 12 kip load levels provided 429 useable deflection readings.

Items needed from NHDOT (i.e., Concurrence, Sub-contract, Assignments, Samples, Testing, etc…):

Traffic count data was requested. NHDOT provided a link to their transportation data management system web page. This data is currently under review.

Anticipated research next three (3) months:

Task 1b.

Prepare the LWD data for back calculation:
- modify templates from 16kip FWD data;
- check deflection data for decreasing deflection readings radially outward from center;
- adjust deflection data for ambient air temperature conditions;
- normalize deflection data to a common load level for each set of readings;
- prepare the layered structure for analysis;
- select a representative basin for each load level.

Circumstances affecting project:

None to Report

Tasks (from Work Plan) *add lines to table as needed*	**Planned % Complete**	**Actual % Complete**
4th Quarter (Oct-Dec 2016) No tasking	--------	--------
Project Requirements 1st Quarter (Jan-Mar) *Project work acceptance documents and project setup*	*100*	*100*
Task 1a 1st Quarter (Jan-Mar) *Prepare the FWD data at 6, 9, and 12 kip load levels, for back-calculation.*	*100*	*100%*
Task 1b 2nd Quarter (Apr-Jun) *Prepare the LWD data at 6, 8, 9, and 12 kip load levels, for back-calculation*	*100*	